IN THE CLAIMS

Please amend the claims as follows:

1 (Currently Amended). An information-processing apparatus including a module which provides one or more clients with a function that needs exclusive access control in which user information stored in the information-processing apparatus is exclusively read or updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a series of session processing steps and incidental information, ~~in a state where a session with a client is maintained by extending a time-out period, which indicates how long the incidental information is stored, by an amount based on the function that needs exclusive access control~~ wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more clients,

create session information including a session ID, a first time-out period, and authentication data, the first time-out period indicating how long the session management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs exclusive access control if a session extension request including the session ID and a client ID is received during the first time-out period and deleting the session information and ending the session if the session extension request is not received during the first time-out period; and

a transaction management unit configured to interact with the processor and to manage a series of indivisible transaction processing steps performed by using the function that needs exclusive access control in a state where the transaction processing is continued by

extending a second time-out period, which indicates how long transaction information is

stored, by an amount based on the function that needs exclusive access control, the

transaction information including a transaction ID, the second time-out period, and the

session ID,

wherein the session management unit is configured to start the management of the

session processing steps when an express management start request is received from the

client or when an implicit request to start management of the session processing steps other

than the express management start request is received.

2 (Currently Amended). An information-processing apparatus including a module

which provides one or more clients with a function that needs exclusive access control in

which user information stored in the information-processing apparatus is exclusively read or

updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a

series of session processing steps and incidental information, in a state where a session with a

client is maintained by extending a time-out period, which indicates how long the incidental

information is stored, by an amount based on the function that needs exclusive access control

wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more

clients,

create session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session

management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a client ID is received during the first time-out period and deleting the session information and ending the session if the session extension request is not received during the first time-out period; and

a transaction management unit configured to interact with the processor and to manage a series of indivisible transaction processing steps performed by using the function that needs exclusive access control in a state where the transaction processing is continued by extending a second time-out period, which indicates how long transaction information is stored, by an amount based on the function that needs exclusive access control, the transaction information including a transaction ID, the second time-out period, and the session ID,

wherein the session management unit is configured to start the management of the session processing steps when an express management start request and an implicit request to start management of the session processing steps other than the express management start request are received from the client.

3 (Currently Amended). An information-processing apparatus including a module which provides one or more clients with a function that needs exclusive access control in which user information stored in the information-processing apparatus is exclusively read or updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a series of session processing steps and incidental information, in a state where a session with a client is maintained by extending a time-out period, which indicates how long the incidental information is stored, by an amount based on the function that needs exclusive access control

wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more

clients,

create session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session

management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a

client ID is received during the first time-out period and deleting the session

information and ending the session if the session extension request is not received

during the first time-out period; and

a transaction management unit configured to interact with the processor and to

manage a series of indivisible transaction processing steps performed by using the function

that needs exclusive access control in a state where the transaction processing is continued by

extending a second time-out period, which indicates how long transaction information is

stored, by an amount based on the function that needs exclusive access control, the

transaction information including a transaction ID, the second time-out period, and the

session ID,

wherein the session management unit is configured to end the management of the

session processing steps when a management end request is received from the client or when

the first time-out period expires.

4 (Currently Amended). An information-processing apparatus including a module

which provides one or more clients with a function that needs exclusive access control in

which user information stored in the information-processing apparatus is exclusively updated

by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a

series of session processing steps and incidental information, ~~in a state where a session with a~~

~~client is maintained by extending a time-out period, which indicates how long the incidental~~

~~information is stored, by an amount based on the function that needs exclusive access control~~

wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more

clients,

create session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session

management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a

client ID is received during the first time-out period and deleting the session

information and ending the session if the session extension request is not received

during the first time-out period; and

a transaction management unit configured to interact with the processor and to

manage a series of indivisible transaction processing steps performed by using the function

that needs exclusive access control in a state where the transaction processing is continued by

extending a second time-out period, which indicates how long transaction information is

stored, by an amount based on the function that needs exclusive access control, the

transaction information including a transaction ID, the second-time out period, and the

session ID,

wherein the session management unit is configured to end the management of the

session processing steps when a management end request is received from the client and the

first time-out period expires.

5 (Currently Amended). An information-processing apparatus including a module

which provides one or more clients with a function that needs exclusive access control in

which user information stored in the information-processing apparatus is exclusively read or

updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a

series of session processing steps and incidental information, in a state where a session with a

client is maintained by extending a time-out period, which indicates how long the incidental

information is stored, by an amount based on the function that needs exclusive access control

wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more

clients,

create session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session

management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a

client ID is received during the first time-out period and deleting the session

information and ending the session if the session extension request is not received

during the first time-out period; and

a transaction management unit configured to interact with the processor and to

manage a series of indivisible transaction processing steps performed by using the function

that needs exclusive access control in a state where the transaction processing is continued by extending a second time-out period, which indicates how long transaction information is stored, by an amount based on the function that needs exclusive access control, the transaction information including a transaction ID, the second time-out period, and the session ID,

wherein the transaction management unit is configured to start the management of the transaction processing steps when an express management start request is received from the client or when an implicit request to start management of the transaction processing steps other than the express management start request is received.

6 (Currently Amended). An information-processing apparatus including a module which provides one or more clients with a function that needs exclusive access control in which user information stored in the information-processing apparatus is exclusively read or updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a series of session processing steps and incidental information, in a state where a session with a client is maintained by extending a time-out period, which indicates how long the incidental information is stored, by an amount based on the function that needs exclusive access control wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more clients,

create session information including a session ID, a first time-out period, and authentication data, the first time-out period indicating how long the session management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a

client ID is received during the first time-out period and deleting the session

information and ending the session if the session extension request is not received

during the first time-out period; and

a transaction management unit configured to interact with the processor and to

manage a series of indivisible transaction processing steps performed by using the function

that needs exclusive access control in a state where the transaction processing is continued by

extending a second time-out period, which indicates how long transaction information is

stored, by an amount based on the function that needs exclusive access control, the

transaction information including a transaction ID, the second time-out period, and the

session ID,

wherein the transaction management unit is configured to start the management of the

transaction processing steps when an express management start request and and implicit

request to start management of the transaction processing steps other than the express

management start request are received from the client.

7 (Currently Amended). An information-processing apparatus including a module

which provides one or more clients with a function that needs exclusive access control in

which user information stored in the information-processing apparatus is exclusively read or

updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a

series of session processing steps and incidental information, in a state where a session with a

client is maintained by extending a time-out period, which indicates how long the incidental

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~~information is stored, by an amount based on the function that needs exclusive access control~~

wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more

clients,

create session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session

management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a

client ID is received during the first time-out period and deleting the session

information and ending the session if the session extension request is not received

during the first time-out period; and

a transaction management unit configured to interact with the processor and to

manage a series of indivisible transaction processing steps performed by using the function

that needs exclusive access control in a state where the transaction processing is continued by

extending a second time-out period, which indicates how long transaction information is

stored, by an amount based on the function that needs exclusive access control, the

transaction information including a transaction ID, the second time-out period, and the

session ID,

wherein the transaction management unit is configured to end the management of the

transaction processing steps when a management end request is received from the client or

when the second time-out period expires.

8 (Currently Amended). An information-processing apparatus including a module

which provides one or more clients with a function that needs exclusive access control in

which user information stored in the information-processing apparatus is exclusively read or

updated by a client through authentication, comprising:

a processor;

a session management unit configured to interact with the processor and to manage a

series of session processing steps and incidental information, in a state where a session with a

client is maintained by extending a time-out period, which indicates how long the incidental

information is stored, by an amount based on the function that needs exclusive access control

wherein said session management unit is configured to

receive a session start request and information to authenticate the one or more

clients,

create session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session

management unit holds the session information, and

extend the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a

client ID is received during the first time-out period and deleting the session

information and ending the session if the session extension request is not received

during the first time-out period; and

a transaction management unit configured to interact with the processor and to

manage a series of indivisible transaction processing steps performed by using the function

that needs exclusive access control in a state where the transaction processing is continued by

extending a second time-out period, which indicates how long transaction information is

stored, by an amount based on the function that needs exclusive access control, the

transaction information including a transaction ID, the second time-out period, and the

session ID,

wherein the transaction management unit is configured to end the management of the

transaction processing steps when a management end request is received from the client and

the first time-out period expires.

9 (Previously Presented). An information-processing apparatus according to claim 5,

wherein the transaction management unit is configured to transmit, before the management of

the transaction processing steps has begun, a lock request to the module so that other clients

than said client are inhibited from using the function that needs exclusive access control.

10 (Previously Presented). An information-processing apparatus according to claim 7,

wherein the transaction management unit is configured to transmit, after the management of

the transaction processing steps has ended, an unlock request to the module so that inhibition

of using the function by other clients than said client is canceled.

11 (Previously Presented). An information-processing apparatus according to claim 5,

wherein the transaction management unit is configured to receive a lock type and a

management start request from the client, the lock type indicating a classification of a lock

request being sent to the module, and the transaction management unit is configured to

transmit the lock request, indicated by the received lock type, to the module so that other

clients than said client are inhibited from using the function that needs exclusive access

control.

12 (Previously Presented). An information-processing apparatus according to claim 5,

wherein the transaction management unit is configured to receive a lock type and a lock type

change request from the client, the lock type indicating a classification of a lock request being

sent to the module, and the transaction management unit is configured to transmit the lock

request, indicated by the received lock type, to the module so that other clients than said

client are inhibited from using the function that needs exclusive access control.

13 (Previously Presented). An information-processing apparatus according to claim 6,

wherein the transaction management unit is configured to determine a classification of a lock

request being sent to the module, in accordance with a kind of a function request received

from the client, and the transaction management unit is configured to transmit the lock

request, indicated by the determined classification, to the module so that other clients than

said client are inhibited from using the function that needs exclusive access control.

14 (Previously Presented). An information-processing apparatus according to claim 6,

wherein the transaction management unit transmits, before the management of the transaction

processing steps is started, a lock request to the module so that other clients than said client

are inhibited from using the function that needs exclusive access control.

15 (Previously Presented). An information-processing apparatus according to claim 8,

wherein the transaction management unit is configured to transmit, after the management of

the transaction processing steps has ended, an unlock request to the module so that inhibition

of using the function by other clients than said client is canceled.

16 (Currently Amended). An information-processing method for an information-

processing apparatus which provides one or more clients with a function that needs exclusive

access control in which user information stored in the information-processing apparatus is

exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and incidental information ~~in a state where a session with a client is maintained by extending a time-out period, which indicates how long the incidental information is stored, by an amount based on the function that needs exclusive access control~~; and

receiving a session start request and information to authenticate the one or more clients;

creating session information including a session ID, a first time-out period, and authentication data, the first time-out period indicating how long the session management unit holds the session information;

extending the first time-out period by an amount based on the function that needs exclusive access control if a session extension request including the session ID and a client ID is received during the first time-out period and deleting the session information and ending the session if the session extension request is not received during the first time-out period;

a transaction management step of managing a series of indivisible transaction processing steps performed by using the function that needs exclusive access control in a state where the transaction processing is continued by extending a second time-out period, which indicates how long transaction information is stored, by an amount based on the function that needs exclusive access control, the transaction information including a transaction ID, the second time-out period, and the session ID,

wherein the session management step starts the management of the session processing steps when an express management start request is received from the client or when an implicit request to start management of the session processing steps other than the express management start request is received.

17 (Currently Amended). An information-processing method for an information-processing apparatus which provides one or more clients with a function that needs exclusive access control in which user information stored in the information-processing apparatus is exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and incidental information ~~in a state where a session with a client is maintained by extending a time-out period, which indicates how long the incidental information is stored, by an amount based on the function that needs exclusive access control~~; and

receiving a session start request and information to authenticate the one or more clients;

creating session information including a session ID, a first time-out period, and authentication data, the first time-out period indicating how long the session management unit holds the session information;

extending the first time-out period by an amount based on the function that needs exclusive access control if a session extension request including the session ID and a client ID is received during the first time-out period and deleting the session information and ending the session if the session extension request is not received during the first time-out period;

a transaction management step of managing a series of indivisible transaction processing steps performed by using the function that needs exclusive access control in a state where the transaction processing is continued by extending a second time-out period, which indicates how long the transaction information is stored, by an amount based on the function that needs exclusive access control, the transaction information including a transaction ID, the second time-out period, and the session ID,

wherein the session management step starts the management of the session processing

steps when an express management start request and an implicit request to start management of the session processing steps other than the express management start request are received from the client.

18 (Currently Amended). An information-processing method for an information-processing apparatus which provides one or more clients with a function that needs exclusive access control in which user information stored in the information-processing apparatus is exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and incidental information in a state where a session with a client is maintained by extending a time-out period, which indicates how long the incidental information is stored, by an amount based on the function that needs exclusive access control; and

receiving a session start request and information to authenticate the one or more clients;

creating session information including a session ID, a first time-out period, and authentication data, the first time-out period indicating how long the session management unit holds the session information;

extending the first time-out period by an amount based on the function that needs exclusive access control if a session extension request including the session ID and a client ID is received during the first time-out period and deleting the session information and ending the session if the session extension request is not received during the first time-out period;

a transaction management step of managing a series of indivisible transaction processing steps performed by using the function that needs exclusive access control in a state where the transaction processing is continued by extending a second time-out period,

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which indicates how long transaction information is stored, by an amount based on the

function that needs exclusive access control, the transaction information including a

transaction ID, the second time-out period, and the session ID,

wherein the session management step ends the management of the session processing

steps when a management end request is received from the client or when the first time-out

period expires.

19 (Currently Amended). An information-processing method for an information-

processing apparatus which provides one or more clients with a function that needs exclusive

access control in which user information stored in the information-processing apparatus is

exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and

incidental information in a state where a session with a client is maintained by extending a

time-out period, which indicates how long the incidental information is stored, by an amount

based on the function that needs exclusive access control; and

receiving a session start request and information to authenticate the one or more

clients;

creating session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session management

unit holds the session information;

extending the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a client

ID is received during the first time-out period and deleting the session information and

ending the session if the session extension request is not received during the first time-out

period;

a transaction management step of managing a series of indivisible transaction

processing steps performed by using the function that needs exclusive access control in a

state where the transaction processing is continued by extending a second time-out period,

which indicates how long transaction information is stored, by an amount based on the

function that needs exclusive access control, the transaction information including a

transaction ID the second time out period, and the session ID,

wherein the session management step ends the management of the session processing

steps when a management end request is received from the client and the first time-out period

expires.

20 (Currently Amended). An information-processing method for an information-

processing apparatus which provides one or more clients with a function that needs exclusive

access control in which user information stored in the information-processing apparatus is

exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and

incidental information in a state where a session with a client is maintained by extending a

time-out period, which indicates how long the incidental information is stored, by an amount

based on the function that needs exclusive access control; and

receiving a session start request and information to authenticate the one or more

clients;

creating session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session management

unit holds the session information;

extending the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a client

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ID is received during the first time-out period and deleting the session information and

ending the session if the session extension request is not received during the first time-out

period;

a transaction management step of managing a series of indivisible transaction

processing steps performed by using the function that needs exclusive access control in a

state where the transaction processing is continued by extending a second time-out period,

which indicates how long transaction information is stored, by an amount based on the

function that needs exclusive access control, the transaction information including a

transaction ID, the second time-out period, and the session ID,

wherein the transaction management step starts the management of the transaction

processing steps when an express management start request is received from the client or

when an implicit request to start management of the transaction processing steps other than

the express management start request is received.

21 (Currently Amended). An information-processing method for an information-

processing apparatus which provides one or more clients with a function that needs exclusive

access control in which user information stored in the information-processing apparatus is

exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and

incidental information in a state where a session with a client is maintained by extending a

time-out period, which indicates how long the incidental information is stored, by an amount

based on the function that needs exclusive access control; and

receiving a session start request and information to authenticate the one or more

clients;

creating session information including a session ID, a first time-out period, and

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authentication data, the first time-out period indicating how long the session management

unit holds the session information;

extending the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a client

ID is received during the first time-out period and deleting the session information and

ending the session if the session extension request is not received during the first time-out

period;

a transaction management step of managing a series of indivisible transaction

processing steps performed by using the function that needs exclusive access control in a

state where the transaction processing is continued by extending a second time-out period,

which indicates how long transaction information is stored, by an amount based on the

function that needs exclusive access control, the transaction information including a

transaction ID, the second time-out period, and the session ID,

wherein the transaction management step starts the management of the transaction

processing steps when an express management start request and an implicit request to start

management of the transaction processing steps other than the express management start

request are received from the client.

22 (Currently Amended). An information-processing method for an information-

processing apparatus which provides one or more clients with a function that needs exclusive

access control in which user information stored in the information-processing apparatus is

exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and

incidental information in a state where a session with a client is maintained by extending a

time-out period, which indicates how long the incidental information is stored, by an amount

~~based on the function that needs exclusive access control~~; ~~and~~

receiving a session start request and information to authenticate the one or more

clients;

creating session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session management

unit holds the session information;

extending the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a client

ID is received during the first time-out period and deleting the session information and

ending the session if the session extension request is not received during the first time-out

period;

a transaction management step of managing a series of indivisible transaction

processing steps performed by using the function that needs exclusive access control in a

state where the transaction processing is continued by extending a second time-out period,

which indicates how long transaction information is stored, by an amount based on the

function that needs exclusive access control, the transaction information including a

transaction ID, the second time-out period, and the session ID,

wherein the transaction management step ends the management of the transaction

processing steps when a management end request is received from the client or when the

second time-out period expires.

23 (Currently Amended). An information-processing method for an information-

processing apparatus which provides one or more clients with a function that needs exclusive

access control in which user information stored in the information-processing apparatus is

exclusively read or updated by a client through authentication, the method comprising:

a session management step of managing a series of session processing steps and

incidental information ~~in a state where a session with a client is maintained by extending a~~

~~time-out period, which indicates how long the incidental information is stored, by an amount~~

~~based on the function that needs exclusive access control~~; and

receiving a session start request and information to authenticate the one or more

clients;

creating session information including a session ID, a first time-out period, and

authentication data, the first time-out period indicating how long the session management

unit holds the session information;

extending the first time-out period by an amount based on the function that needs

exclusive access control if a session extension request including the session ID and a client

ID is received during the first time-out period and deleting the session information and

ending the session if the session extension request is not received during the first time-out

period;

a transaction management step of managing a series of indivisible transaction

processing steps performed by using the function that needs exclusive access control in a

state where the transaction processing is continued by extending a second time-out period,

which indicates how long transaction information is stored, by an amount based on the

function that needs exclusive access control, the transaction information including a

transaction ID, the second time-out period, and the session ID,

wherein the transaction management step ends the management of the transaction

processing steps when a management end request is received from the client and the second

time-out period expires.